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Rocky Flats
Environmental Technology Site

2-C93-COEM-DES-273
REVISION 1

ENGINEERING STANDARDS FOR PROCUREMENT

APPROVED BY: [signature] for / D G Ruscitto / 4/19/99
Site Chief Engineer — Print Name — Date
Kaiser-Hill Company, LLC

Effective Date: 4/30/99

CONCURRENCE BY THE FOLLOWING DISCIPLINES IS DOCUMENTED IN THE PROCEDURE HISTORY FILE:

Kaiser-Hill
Rocky Flats Closure Site Services
Rocky Mountain Remediation Service
Safe Sites of Colorado
Wackenhut Services, LLC

USE CATEGORY 3
The procedure SHALL be available at a known location for reference

Reviewed for Classification/UCNI
By: [signature] (UNU)
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List of Effective Pages

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The following DCF(s) for revision to this document are applicable:

None

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1. PURPOSE

The purpose of this procedure is to provide requirements for design engineer input into the procurement process of items and engineering design-related services.

2. SCOPE

This procedure applies to all Site personnel when purchasing engineered items or services at Rocky Flats Environmental Technology Site (Site). This includes the integrating contractor, principal subcontractors, and associated subcontractors. The integrating contractor is Kaiser-Hill (K-H). The principal subcontractors are Closure Site Services, Rocky Mountain Remediation Services, Safe Sites of Colorado, and Wackenhut, or their successors. This procedure also applies to Architect Engineer/Construction/Construction Management (AE/C/CM) companies unless their Statement of Work specifies that they purchase items and services through their company procurement process.

The requirements in this procedure are part of the engineering design process set forth in 1-V51-COEM-DES-210. Procurement of items and engineering design-related services cannot be accomplished using this procedure alone. The specifications and BOMs/CBOMs that are developed by this procedure become part of the DES-210 design package and are not valid until approved as part of that design package.

This procedure is to be used as part of engineering design performed in accordance with 1-V51-COEM-DES-210, *Design Process Requirements* (DES-210) and with work performed in accordance with MAN-071-IWCP, *Integrated Work Control Program Manual* (IWCP).

The responsibilities of this procedure are to be performed by the Design Engineer whose company is responsible for the engineering design of the item or service to be procured.

In this procedure engineering *design-related services* is used to describe services that are purchased in conjunction with the item being purchased. These services are described on the specification. For instance, services to install and balance a new HVAC system would be an engineering design-related service. A service to balance an existing HVAC system would be purchased through another procurement process such as a Statement of Work.

3. INTERFACES

The Site procurement process involves numerous organizations, such as Engineering, Quality Assurance, Logistics, Procurement, and Receipt Inspection. The Site procurement process is defined in the following procedures:

- 1-W36-APR-111, *Acquisition Procedure for Requisitioning Commodities and Services*

  This procedure provides direction for requisitioning commodities and services (including construction) at the Site. The requirements in this procedure apply to all Site personnel when requisitioning commodities and services.

- 2-C93-COEM-DES-273, *Engineering Standards for Procurement*

  This procedure provides the requirements for Design Engineer input into the procurement process of items and services.

- PRO-572-PQR-001, *Procurement Quality Assurance Requirements*

  This procedure applies to the quality-related aspects of procurements designated Procurement Levels (PL) 1, 2, and 3. It establishes the responsibilities for applying procurement quality assurance requirements to subcontractors to ensure procured items and services meet specified needs. The definition of Procurement Levels 1, 2, and 3 are provided in this procedure.

- MAN-071-IWCP, *Integrated Work Control Program Manual*

  This procedure details the work process and controls required to do work at the Site.

- 1-V51-COEM-DES-210, *Design Process Requirements*

  This procedure provides the requirements for developing an Engineering Design Package (EDP). The EDP contains documents such as drawings, specifications, and BOMs. Appendix 1 of this procedure is used in determining System Category which is instrumental in developing Procurement Levels.

- 4-J44-RC&I-6600, *Nonweapons-Procured Item Acceptance and Certification*

  This procedure describes the engineering activities, responsibilities, and documentation necessary for processing deficiencies which are identified and documented as nonconforming items found during receipt, certification, and inspection.

4. SHALL, SHOULD, AND MAY STATEMENT

When used in this procedure, the word **SHALL** identifies those requirements that are mandatory. The word **should** indicate a recommendation that is based on standards and good safety practices. The word **may** denote permission, that is, neither a requirement nor a recommendation. For emphasis, these terms are presented in boldface text.

5. RESPONSIBILITIES

5.1 Design Engineer

- Develops the documentation, such as drawings, specifications, and Bill of Materials (BOM), that will ensure the correct engineered items or engineering design-related services are procured.
- Makes preliminary assignment of Procurement Level (PL) to engineered items and engineering design-related services in accordance with Quality Procedure PRO-572-PQR-001.
- Develops specifications using Construction Specifications Institute (CSI) Master Format.
- Obtains input from the cognizant Quality Assurance organization when developing specifications to ensure the correct assignment of quality attributes.
- Obtains input from the Customer Service Organization for purchase of waste-related or WIPP items and from other organizations, as appropriate.
- Signs the specification and obtains signature from the cognizant quality assurance (and Customer Service Organization, if applicable) indicating agreement on the technical and quality contents of the specification.
- Generates Master Agreement Order/Receiving Forms (MAORF) for items to be purchased through Master Agreement (MA) subcontracts in accordance with procedure 1-PRO-453, *Master Agreement Subcontract Procurement.*
- Includes specifications (I-Specs) and BOM/CBOM in the design package.
- Obtains cognizant Quality Assurance approval, and Customer Service Organization approval, if applicable, on the design package cover sheet (Engineering Order) to indicate correct assignment of quality attributes.
- Ensures that a Purchase Requisition is prepared (either an RF1570 form or an electronic requisition prepared by Logistics).
- Obtains Wadlet Manager approval on the Purchase Requisition.

- Ensures the Purchase Requisition and a copy of the design package cover sheet with approval signatures from the engineer, the cognizant quality assurance organization and Customer Service Organization, if applicable, is forwarded to Procurement.
- Ensure that changes to specifications are submitted to Procurement.
- Assists in resolving nonconforming items and conditions found during receipt, certification, and inspection.

6. INSTRUCTIONS

This section provides instructions to Design Engineers for input into the procurement process for purchasing items and engineering design-related services.

6.1 General

The steps for accomplishing the procurement portion of the DES-210 design process and IWCP Type 2 and 3 work package are summarized below:

- Develop specifications for the design package
  - Specifications must conform to the format and numbering system of the CSI Master Format
  - If electronic I-Specs are used, the I-Spec must contain the CSI Master Format number
- Obtain Quality Assurance input during the development of the specifications
- Sign the specification to indicate Design Engineer approval of the technical portion of the specification
- Obtain signatures from cognizant quality assurance (and Customer Service Organization, if applicable) to indicate approval of the quality portion of the specification.
- Include the specifications/I-Specs and BOM/CBOM in the design package

- Ensure that the cognizant QA organization is included in the review and approval of the design package
- Ensure that the cognizant Customer Service Organization is included in the review and approval of a waste or WIPP design package
- Following approval of the design package, ensure that the Purchase Requisition is written
  - For non-computer-generated Purchase Requisition, ensure form RF1570 is developed
  - For computer-generated Purchase Requisition, ensure Logistics writes the requisition
- Obtain approval signature of the cognizant Wadlet Manager on the Purchase Requisition
- Ensure that the Purchase Requisition, along with a copy of the specifications and signed Engineering Order, is submitted to Procurement

6.2 Procurement Level Determination

The Design Engineer **SHALL** assign the preliminary Procurement Level (PL) to an item or engineering design-related service to be purchased.

The Design Engineer determines the System Category using the DES-210 design process. The System Category must comply with the System Category determination set forth in applicable authorization basis documents and applicable program technical requirements. Further, the Design Engineer determines the safety function of the item or engineering design-related service; that is, will failure have a safety effect on the public, worker, or environment.

Final assignment of PL level is made by the cognizant quality assurance organization. Any change to the preliminary PL assignment must be coordinated with the cognizant Design Engineer

6.3 Bill of Material/Consolidated Bill of Material

The Design Engineer **SHALL** prepare a BOM in accordance with DES-210 and/or with IWCP if applicable. An electronic Consolidated Bills of Material (CBOM) developed in the Parts and Equipment System (PEMS) **may** additionally be used. Both the BOM and the CBOM are a list of items to be purchased for an activity or a project. Items may be purchased from specifications developed from either a BOM or a CBOM. The use of the BOM and CBOM are interchangeable. A Purchase Requisition can be developed from either a BOM or a CBOM.

6.4 Specifications

The Design Engineer **SHALL** work with the cognizant quality assurance organization to prepare detailed specifications for the items and engineering design-related services to be procured. The specification is a detailed statement of particulars of an item prescribing such things as materials, dimensions, testing, and workmanship for an item to be built, installed, or manufactured or for an engineering design-related service. The specification also contains the quality attributes that are assigned by quality assurance.

Specifications **SHALL** contain technical and quality requirements.
A typical specification will contain such technical information as follows:

- Item description
- Material, dimension, and workmanship requirements
- Receipt inspection requirements
- Vendor submittals approvals
- Storage requirements

Quality requirements are determined by the PL and address such factors as follows:

- The effect a malfunction or failure of the item or service would have on plant/structure/system safety.
- The complexity or uniqueness of the item/service
- The need for special controls and surveillance over equipment and processes
- The degree that functional compliance can be demonstrated by inspection and tests

Additional direction for determining quality requirements is found in PRO-572-PQR-001, *Procurement Quality Assurance Requirements*.

Specifications (including I-Specs) **SHALL** be numbered in accordance with the Construction Specification Institute (CSI) Master Format as found in the CSI *Manual of Practice*. Specifications (with the exception of I-Specs) **SHALL** be formatted in accordance with the CSI Master Format.

I-Specs **may** be used. An I-Spec is an electronic specification that is created and stored in PEMS. The PEMS database contains existing I-Specs. If an I-Spec for an item is not available in the database, a new I-Spec **may** be developed. The PEMS system is not programmed to apply CSI formatting to I-Specs. It is the responsibility of the Design Engineer to ensure that applicable information is included in an I-Spec.

The Design Engineer SHALL sign the specification and obtain signature from quality assurance (and Customer Service Organization, if applicable) to indicate agreement to the technical and quality content of the specification. A hard copy of the signed specification (including I-Specs) **SHALL** be included in the associated DES-210 or IWCP work package. The cognizant quality assurance organization and Customer Service Organization, if applicable, **SHALL** review

the design package specifications and indicate approval on the design package cover sheet. I-Specs **SHALL not** be electronically approved.

Changes to the engineering design package, including changes to the BOM/CBOM, specifications, or purchase requisition require the use of an Engineering Change Request in accordance with DES-210. The Design Engineer SHALL submit the new BOM/CBOM, specification, or purchase requisition to Procurement along with the approved design cover sheet (i.e., the Engineering Order).

6.5 Parts and Equipment Management System (PEMS)

PEMS is an Oracle-based database containing I-Specs covering a wide range of items. In addition to I-Specs PEMS has provisions for developing Consolidated Bills of Material (CBOM), subcontractor and manufacturer identification, inventory status, schedule information, and procurement receiving status.

6.6 Purchase Requisition

The Design Engineer **SHALL** assure that an appropriate purchase requisition is developed, approved by the cognizant Wadlet Manager, and submitted to Procurement after the design package is approved.

The Design Engineer **SHALL** complete purchase requisition RF1570 manually or request Logistics to prepare a computer-generated requisition.

The Design Engineer **SHALL** ensure that the approved purchase requisition and a copy of the design package cover sheet with approval signatures is submitted to the appropriate procurement department for purchase.

6.7 Master Agreement Subcontract Procurement

The Design Engineer **SHALL** use the Master Agreement Subcontract Procurement process when the items to be purchased are supplied by a pre-approved subcontractor, that is, a subcontractor with an approved Master Agreement subcontract in accordance with PQR-001. The process is described in APR-111 and in PQR-001. The Design Engineer lists items on the Master Agreement Order/Receiving Form (MAORF) located in PQR-001, Appendix 1. The MAORF serves as the BOM and the Purchase Requisition.

6.8 Review of Uncertified Items

APR-111 prescribes that items that are available from excess material or from warehouse stock should be considered for use before purchasing the item new. The design engineer **SHALL** evaluate the uncertified item to determine that the item is technically and functionally equivalent to the replaced item.

The design engineer should perform an evaluation that addresses such things as:

- Is the item damaged or degraded?
- Is the item suspect/counterfeit?
- Is the item the same model and part number and from the same manufacturer?
- Is the item equivalent in:
- physical, mechanical, electrical interfaces?
    - materials of construction?
    - form, fit, and function?

7. RECORDS PROCESSING INSTRUCTIONS

All records generated by this procedure are In-Process documents that will become part of a design work package (engineering design, IWCP, or other). The record type will be the same as the record type of the work package. Records will be protected, stored and processed as part of the work package.

Record Identification	Record Type Determination	Protection / Storage Methods	Processing Instructions
1. BOM 2. Specification 3. I-Spec 4. CBOM 5. Purchase Requisition RECORDS CLASSIFICATION: It is a WIPP Record if the materials of the design process support design of the WIPP Cargo Containers	In-process WIPP/LL/LLM Quality Assurance Document (or) In-process Quality Assurance Document (or) In-process Non-QA Document	The Design Engineer **SHALL** implement a reasonable level of protection to prevent loss or degradation. Records shall be stored in standard office filing cabinets.	Continue prescribed processing of document(s). Once document is complete (authenticated), it SHALL be handled and controlled as a WIPP/LL/LLM QA RECORD. (or) Once document is complete (authenticated), it SHALL be handled and controlled as a QA RECORD. (or) Once document is complete (authenticated), it SHALL be handled and controlled as a RECORD.

9. ACRONYMS

BOM	Bill of Material
CBOM	Consolidated Bill of Material
CSI	Construction Specification Institute
I-Spec	Item Specification
IWCP	Integrated Work Control Program
MAORF	Master Agreement Order/Receiving Form
PEMS	Parts and Equipment Management System
PL	Procurement Level

10. REFERENCES

1-PRO-453, *Master Agreement Subcontract Procurement*

PRO-572-PQR-001, *Procurement Quality Assurance Requirements*

1-V51-COEM-DES-210, *Design Process Requirements*

1-W36-APR-111, *Acquisition Procedure for Requisitioning Commodities and Services*

MAN-071-IWCP, *Integrated Work Control Manual*

Construction Specification Institute, *Manual of Practice*